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10/072,776	02/11/2002	Richard J. Manzolati	D/A0A46 (1508/3530)	2022

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EXAMINER
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STEELMAN, MARY J

ART UNIT	PAPER NUMBER
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2191

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/072,776

Applicant(s)

MANZOLATI, RICHARD J.

Examiner

Mary J. Steelman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-24 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

1. This Office Action is in response to Remarks and Amendments received 6 June 2005.

Per Applicant's request, claims 1, 2, 8, 9, and 15 have been amended. Claims 22-24 have been added. Claims 1-24 are pending.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,353,841 to Marshall et al., in view of US Patent 6,781,682 B1 to Kasai.

Per claims 1 and 8:

-obtaining...information about the at least one part of the apparatus;

(Marshall: FIG. 9, col. 15, lines 32-36, "Input signals containing dynamic instructions...are received (obtaining information) from connections...")

-determining instructions for optimizing at least one operation of the at least one part of the apparatus based on the obtained information;

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(Marshall: Col. 15, lines 45-50, "The signals input from the wiring network pass through a dynamic instruction enable gate. The function of this gate is to enable either dynamic instruction bits...or to prevent them from being used (determine enable or disable)...This is determined by a single bit of configuration RAM for that ALU..."

-applying the instructions to the at least one operation of the apparatus.

(Marshall: Col. 15, lines 50-55, "If the dynamic instruction bits are to be used, gate passes the values of I input from the wiring network (applying instructions). If not, then the output of gate will be zero, and the instruction input to the ALU will be that which has already been stored as stored instruction..."")

Marshall failed to disclose specifically "obtaining from at least one part of an apparatus..." and "determining instructions for optimizing at least one operation of the at least one part of the apparatus based on the obtained information" However Kasai provided an example of an apparatus with very specific details related to optimizing at least one part of an apparatus, an optical apparatus. As an example, information is obtained from the 'observation apparatus' (col. 7, lines 60-63), which observes the status of the light output of the optical unit (obtaining information from at least one part of an apparatus). See FIG. 1, #9. Specifically Kasai disclosed 'directions for optimizing an apparatus' by using a genetic algorithm to search for optimal values (col. 9, lines 50-53 & extensive details related to genetic algorithms are found at col. 18, line 1-col. 19, line 56).

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Therefore, it would have been obvious, to one of ordinary skill in the art at the time of the invention to modify Marshall's invention related to reconfigurable processor devices, by including specific details as provided by Kasai to adjust an apparatus using information obtained from the apparatus, because feedback adjustments can reduce the cost of manufacturing, reduce the need for skilled technicians (col. 1, lines 46-48), and by using a 'genetic algorithm' to adjust parameters, an optimal solution may be found (col. 4, lines 25-41).

Per claim 15:

An apparatus comprising:

-one or more parts;

(FIGs. 1 & 2 – shows multiple parts.)

-an information component for at least one of the part, the information component having data about the at least one part;

(Col. 6, lines 1-8, "...each ALU has a first pair of 4-bit inputs a, which are directly connected within the ALU, a second pair of 4-bit inputs b...and four 4-bit outputs f...Each ALU also has an independent pair of 1-bit carry inputs..." multiple parts with information)

Marshall fails to provide explicit references regarding:

-an optimization processing system that determines instructions for optimizing at least one operation of the at least one part of the apparatus based on data obtained from the at least one

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part and applies the instructions to the at least one operation of the apparatus to optimize the performance.

However, Kasai disclosed a specific example of an apparatus, an optical device that includes (col. 7, lines 60-62) an observation apparatus for observing the status of the light output of the optical unit (based on data obtained). As an example, element parameters (col. 8, line 56) are adjusted (at least one part of the apparatus) (col. 9, line 9) so that the functions of the optical apparatus satisfy the stipulated specifications (optimizing at least one operation) (col. 9, lines 22-23). An Adjustment algorithm execution unit (col. 9, line 29) varies the parameters using control signals corresponding to digital values stored in the registers (col. 9, line 38-41). The adjustment algorithm uses a genetic algorithm to search for optimal values (col. 9, lines 60-63).

Therefore, it would have been obvious, to one of ordinary skill in the art at the time of the invention to modify Marshall's invention related to reconfigurable processor devices, by including specific details as provided by Kasai to adjust an at least one part of an apparatus, because it can reduce the cost of manufacturing, reduce the need for skilled technicians (col. 1, lines 46-48), and by using a 'genetic algorithm' to adjust parameters, an optimal solution may be found (col. 4, lines 25-41).

Per claims 2, 9, and 16:

-identifying the at least one operation of the apparatus being optimized.

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(Marshall: Col. 4, lines 39-43, "...application of the dynamic instruction mask (identify instruction) to an instruction received by the processing device enables the instruction to provide both an instruction input to the arithmetic logic unit for determining the function of the arithmetic logic unit...")

Per claim 3, 10, and 17:

-interrogating the at least one part for the information.

(Marshall: Col. 4, lines 39-43, "...application of the dynamic instruction mask to an instruction received by the processing device enables the instruction to provide both an instruction input to the arithmetic logic unit for determining the function of the arithmetic logic unit (interrogate part)...")

Per claims 4, 11, and 18:

-determining if any other parts need to be interrogated;

(Marshall: FIG. 1 – indicates 6 ALUs, each of which may be interrogated. Col. 4, lines 39-43, "...application of the dynamic instruction mask to an instruction received by the processing device enables the instruction to provide both an instruction input to the arithmetic logic unit for determining the function of the arithmetic logic unit...")

-interrogating the other parts which are needed for the obtained information.

See rejection of claims 3 and 4 above. Multiple parts are interrogated for information.

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Per claims 5, 12, and 19:

-obtained information for the at least one of the part comprises at least one functional parameter of the at least one part.

(Marshall: Col. 9, lines 13-16, "Accordingly only when the ENABLE signal is high and the content of the memory cell is high (parameter), the conductor...are connected ...", col. 10, lines 8-10, "...using the properties of memory cell. Both the content and the complement of the content of this memory cell are readily available as outputs.")

Per claims 6, 13, and 20:

-obtained information for the at least one of the part comprises at least one algorithm of the at least one part.

(Marshall: Col. 10, lines 38-41, "Appropriate construction and connection of multiplexer...allows selection of a value received from the wiring network as the output of the multiplexer or buffer...with that value then being used in determining the instruction of the ALU..." , col. 10, lines 46-48, "Use of the multiplexer or buffer for this purpose means that the value used for providing instruction to the ALU (algorithm) is also the value made available for passing onwards...")

Per claims 7, 14, and 21:

-comparing the obtained information about the at least one part against stored information about the at least one part to obtain a difference;



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(Marshall: Col. 14, Table 3 – AEQUALSB, MATCH1, MATCH0: Compare operators are disclosed.)

-using the difference to determine the instructions for optimizing the at least one operation of the apparatus.

(Marshall: Col. 15, lines 21-22, "...ability to generate an instruction for a functional unit as the output of another functional unit.")

Per claims 22, 23, and 24:

Marshall failed to explicitly disclose:

-transmitting, to the at least one part, the instructions for optimizing the at least one operation of the at least one part of the apparatus;

-executing the instructions with a processor of the at least one part to optimize the at least one operation of the apparatus.

However, Kasai disclosed transmitting the instructions for optimizing at col. 11, lines 59-65. As an example, via a control signal (transmitting), the parameter of the element is varied. Col. 17, lines 10-12, "If the performance is not within the tolerances...the adjustment apparatus changes the register values."

Therefore, it would have been obvious, to one of ordinary skill in the art at the time of the invention to modify Marshall's invention related to reconfigurable processor devices, by

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including specific details as provided by Kasai to adjust a part of an apparatus, because it can reduce the cost of manufacturing, reduce the need for skilled technicians (col. 1, lines 46-48), and by using a 'genetic algorithm' to adjust parameters, an optimal solution may be found (col. 4, lines 25-41).

***Response to Arguments***

4. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new grounds of rejection.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

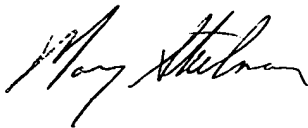
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached at (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman



08/15/2005



**WEI Y. ZHEN**  
**PRIMARY EXAMINER**